The drawings were objected to under 37 C.F.R. § 1.84(a) for allegedly failing to show the "nip unit N2" mentioned in the specification. In addition, the drawings were objected to for a typographical error in Figure 4. In response, a Request For Approval Of Drawing Changes accompanies this amendment in which it is proposed to amend Figure 1 to include the reference character "N2" to identify the transfer nip N2 described in the specification and to amend Figure 4 to attend to the typographical error noted in the Office Action. In addition, the specification has been amended to change "transfer nip unit N2" on page 18, line 20, to read "transfer nip N2." Approval of the proposed drawing changes and withdrawal of the drawing objections are respectfully requested.

Claims 2, 3 and 5 to 24 were rejected under 35 U.S.C. § 112, first paragraph, for allegedly containing subject that was not described in the specification in such a way so as to enable one skilled in the relevant art to make and/or use the invention. With respect to Claims 2, 3, 5 and 6, the Office Action contends that it is not possible to turn on both beams (A, B) before modulating the drive signals. As described in the specification at page 21, lines 7 to 10, the beam-A circuit 34 controls the beam A emitted by a semiconductor laser and the beam-B circuit 35 controls the beam B emitted by a semiconductor laser. Figures 6D and 7C depict a turning-on signal generated by one of these beam circuits with and without pulse-width modulation by the PWM circuit 33, respectively, as discussed beginning at page 24, line 22, of the specification. In comparing Figures 6D and 7C, it can be seen that the PWM circuit 33 can shorten the turning-on time of the turning-on signal by skipping short periods of time. However, as shown in Figure

7C, the turning-on signal can still be generated by a beam circuit without the pulse-width modulation produced by the PWM circuit 33. Therefore, Applicants respectfully submit that the specification clearly describes the possibility of turning on the beams without pulse-width modulation by the PWM circuit.

In view of the foregoing remarks, reconsideration and withdrawal of the § 112, first paragraph rejection of Claims 2, 3, 5 and 6 are respectfully requested. Furthermore, since these claims have been rewritten in independent form and since no other issues have been raised in the Office Action with respect to these claims, Claims 2, 3, 5 and 6 are now believed to be in condition for allowance.

Turning to Claims 7 to 24, the Office Action contends that the specification does not enable one skilled in the relevant art to make or reconstruct the claimed detecting means and exposure intensity control means. Without conceding the correctness of this rejection, Applicants have amended independent Claims 7 and 15 to remove the exposure intensity control means. With respect to the claimed detecting means, Figure 4, which is described beginning at page 22, line 5, of the specification, depicts a process performed according to one aspect of the invention, where the detecting means performs the process steps S41 and S43. Applicants respectfully submit that in view of the description associated with Figure 4, one skilled in the relevant art could make detecting means as claimed in the present invention. Accordingly, reconsideration and withdrawal of the § 112, first paragraph, rejection of Claims 7 to 24 are respectfully requested.

Claims 1 and 4 were rejected under 35 U.S.C. § 102(b) over U.S. Patent No. 5,430,472 (Curry); and Claims 7 to 9, 12 to 17 and 20 to 24 were rejected under § 102(b)

over JP 8-317157 (Matsunaga). Without conceding the correctness of these rejections, Applicants have canceled Claims 1, 4, 8, 9, 16 and 17 without prejudice. Independent Claims 7 and 23 have been amended to include the subject matter of Claim 10, which was not rejected over the applied prior art. Independent Claims 15 and 24 have been amended to include subject matter along the lines of Claim 19, which was not rejected over the applied prior art. Accordingly, independent Claims 7, 15, 23 and 24 are believed to be allowable over the applied art and withdrawal of the § 102(b) rejection of these claims is respectfully requested.

New independent Claims 25 and 29 concern image forming in which a plurality of light beams are emitted and a common photosensitive body is scanned with the plurality of light beams. The light beams are modulated in accordance with respective image data and an exposure amount of the light beams is controlled such that in the case that image pixels, each of which is overlapped with another image pixel, are exposed in a common scanning, an exposure amount to expose at least one of the image pixels relatively increases compared to a case that the image pixels are exposed in different scannings.

The references applied in the Office Action are not understood to disclose or suggest the foregoing features of the present invention. In particular, Curry and Matsunaga, either alone or in combination, are not understood to disclose at least the feature of increasing an exposure amount of overlapping pixels that are exposed in a common scanning relative to an exposure amount of overlapping pixels that are exposed in different scannings. Accordingly, independent Claims 25 and 29 are believed to be allowable over the applied references.

The other claims in the application are dependent from the independent claims discussed above and are therefore believed to be allowable over the applied references for at least the same reasons. Because each dependent claim is deemed to define an additional aspect of the invention, however, the individual consideration of each on its own merits is respectfully requested.

In view of the foregoing amendment and remarks, the entire application is now believed to be in condition for allowance and such action is respectfully requested at the Examiner's earliest convenience.

Applicants' undersigned attorney may be reached in our Costa Mesa, California, office by telephone at (714) 540-8700. All correspondence should be directed to our address given below.

Respectfully submitted,

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VERSION WITH MARKINGS TO SHOW CHANGES MADE TO THE SPECIFICATION

Please amend the paragraph starting at page 17, line 10, as follows.

Fig. 1 is a schematic cross-sectional view of a laser printer as an image forming apparatus according to the present invention. The image forming apparatus main body M represents a printer engine. A photosensitive drum 1 is a cylindrical electrophotographic photosensitive body and is rotationally driven by a driver means (not shown) in a direction indicated by an arrow R1. A charging member 2 is located in contact with the surface of the photosensitive drum 1 and is rotated in a direction indicated by an arrow R2. After the photosensitive drum 1 is uniformly charged by the charging member 2, an electrostatic latent image is formed on the surface of the photosensitive drum 1 by a latent image forming unit 3. A developing unit 4 has a hopper as a toner storage unit for storing a toner T and a developing sleeve 4a as a toner support body and develops the electrostatic latent image formed on the photosensitive drum 1. A developing blade 4b as a toner control member is provided in the vicinity of the developing sleeve 4a, which is rotated in a direction indicated by an arrow R4. An engine control unit 8 has a power source for driving the image forming apparatus and a high voltage supply circuit for

supplying a bias for [an] image formation. By the engine control unit 8, a developing bias obtained by superimposing an alternating current bias on a direct current bias is provided between the photosensitive drum 1 and the developing sleeve 4a. Thus, the toner is applied to the electrostatic latent image formed on the photosensitive drum 1 to develop it as a toner image. The toner image on the photosensitive drum 1 is transferred to a transfer material P such as [a] paper by a transfer unit $5_{,}$ which is rotated in a direction indicated by an arrow R5. The transfer material P is stored in a paper feeding cassette 9, fed by a paper feed roller (not shown), and is carried to a transfer nip [unit] N2 between the photosensitive drum 1 and the transfer unit 5. The toner image transferred to the transfer material P is carried to a fixing unit 7 together with the transfer material P and then heated and pressed thereby. Thus, the toner image is fixed to the transfer material P to become a [recording] recorded image. On the other hand, after the transfer of the toner image, [a] toner [remained] remaining on the photosensitive drum 1without being transferred to the transfer material P (hereinafter referred to as transfer residual toner) is removed by a cleaning blade 6a in a cleaning unit 6. The photosensitive drum 1 in which the transfer residual toner on the surface is removed is used for the next image formation that is [stated] started from the charging by the charging member 2, and thus a series of image forming processes as described above is repeated.

Please amend the paragraph starting at page 24, line 15, as follows.

Figs. 7A to 7C show one example of a time chart in the case where the beam-A-circuit is not controlled by the PWM circuit. [the] The image clock as the standard in Fig. 7A, the image data of the beam "A" in Fig. 7B, and a turning on signal from the beam-A-circuit 34 based on the image data which is not pulse-width-modulated in Fig. 7C, are respectively shown.

VERSION WITH MARKINGS TO SHOW CHANGES MADE TO CLAIMS

1. (Canceled)

2. (Amended) An image forming apparatus [according to claim 1] comprising:

scanning means for scanning a photosensitive body using a plurality of semiconductor lasers to form a latent image; and

latent image forming means for pulse-width-modulating a drive signal of the semiconductor lasers in accordance with a write position of the latent image in the case that exposure is performed such that one beam from the plurality of semiconductor lasers is partially overlapped with an adjacent beam from the plurality of semiconductor lasers on the photosensitive body,

wherein [the] said latent image forming means does not pulse-width-modulate the drive signal[, when] in the case that at least two of the plurality of semiconductor lasers are simultaneously turned on in one scanning, and

wherein the latent image forming means pulse-width-modulates the drive signal[, when] in the case that one [of the] beam[s] from the plurality of semiconductor lasers which [are] is turned on in one scanning is adjacent to one [of the] beam[s] from the plurality of semiconductor lasers which [are] is turned on in the next scanning.

3. (Amended) An image forming apparatus [according to claim 1] comprising:

scanning means for scanning a photosensitive body using a plurality of semiconductor lasers to form a latent image; and

latent image forming means for pulse-width-modulating a drive signal of the semiconductor lasers in accordance with a write position of the latent image in the case that exposure is performed such that one beam from the plurality of semiconductor lasers is partially overlapped with an adjacent beam from the plurality of semiconductor lasers on the photosensitive body,

wherein [the] said latent image forming means does not pulse-width-modulate the drive signal[, when] in the case that at least two of the plurality of semiconductor lasers are simultaneously turned on in one scanning, and

wherein said [the] latent image forming means pulse-width-modulates the drive signal[, when] in the case that one of the plurality of semiconductor lasers is turned on in one scanning.

4. (Canceled)

5. (Amended) An image forming method [according to claim 4] for scanning a photosensitive body using a plurality of semiconductor lasers to form a latent image, comprising the step of:

forming a latent image by modulating a drive signal of the semiconductor

lasers by PWM in accordance with a write position of the latent image in the case that exposure is performed such that one beam from the plurality of semiconductor lasers is partially overlapped with an adjacent beam from the plurality of semiconductor lasers on the photosensitive body,

wherein, in [the] said latent image forming step, the drive signal is not modulated by PWM [when] in the case that at least two of the plurality of semiconductor lasers are simultaneously turned on in one scanning, but is modulated by PWM [when] in the case that one [of the] beam[s] from the plurality of semiconductor lasers which [are] is turned on in one scanning is adjacent to one [of the] beam[s] from the plurality of semiconductor lasers which [are] is turned on in [the] a next scanning.

6. (Amended) An image forming method [according to claim 4] for scanning a photosensitive body using a plurality of semiconductor lasers to form a latent image, comprising the step of:

forming a latent image by modulating a drive signal of the semiconductor lasers by PWM in accordance with a write position of the latent image in the case that exposure is performed such that one beam from the plurality of semiconductor lasers is partially overlapped with an adjacent beam from the plurality of semiconductor lasers on the photosensitive body,

wherein, in [the] said latent image forming step, the drive signal is not modulated by PWM [when] in the case that at least two of the plurality of semiconductor

lasers are simultaneously turned on in one scanning, but is modulated by PWM [when] in the case that one of the plurality of semiconductor lasers is turned on in one scanning.

7. (Amended) An image forming apparatus comprising:

a plurality of emitting means for emitting a plurality of light beams;

scanning means for scanning the plurality of light beams emitted from [the] said plurality of emitting means on a common photosensitive body;

modulating means for pulse-width modulating the plurality of light beams emitted from said plurality of emitting means in accordance with respective image data;

detecting means for detecting a plurality of image pixels which are adjacent to each other in a sub-scanning direction and which are exposed in different main scannings, in accordance with the image data; and

[exposure intensity control means for relatively decreasing an exposure intensity of the light beams for at least one of the plurality of image pixels detected by the detecting means, in response to a detection result of the detecting means]

pulse-width control means for controlling said modulating means such that a pulse width for a pixel detected by said detecting means is shorter than a pulse width for a pixel which is not detected by said detecting means.

8. (Canceled)

9. (Canceled)

10. (Canceled)

11. (Amended) An image forming apparatus according to claim [10] 7, wherein [the exposure intensity] said pulse-width control means controls [the] said modulating means such that the pulse width for [to] the pixel detected by [the] said detecting means is shorter than 100% and the pulse width for [to] the other pixel is 100%.

12. (Amended) An image forming apparatus according to claim 7, wherein [the] said detecting means comprises [has] storage means for storing image data of at least one main scanning.

15. (Amended) An image forming apparatus comprising:

a plurality of emitting means for emitting a plurality of light beams;

scanning means for scanning the plurality of light beams emitted from [the] said plurality of emitting means on a common photosensitive body;

modulating means for pulse-width modulating the plurality of light beams emitted from said plurality of emitting means in accordance with respective image data;

detecting means for detecting a plurality of image pixels which are adjacent to each other in a sub-scanning direction and which are exposed in [the] common main scannings, in accordance with the image data; and

[exposure intensity control means for relatively increasing an exposure intensity of the light beams for at least one of the plurality of image pixels detected by the detecting means, in response to a detection result of the detecting means]

pulse-width control means for controlling said modulating means such that a

pulse width for a pixel detected by said detecting means is longer than a pulse width for a pixel which is not detected by said detecting means.

16. (Canceled)

17. (Canceled)

18. (Canceled)

19. (Amended) An image forming apparatus according to claim [18] 15, wherein [the exposure intensity] said pulse-width control means controls [the] said modulating means such that the pulse width [to] for the pixel which is detected by [the] said detecting means is 100% and the pulse width [to] for the pixel which is not detected by [the] said detecting means is shorter than 100%.

20. (Amended) An image forming apparatus according to claim 15, wherein [the] said detecting means [has] comprises storage means for storing image data of at least one main scanning.

23. (Amended) An image forming method comprising:

an emitting step of emitting a plurality of light beams;

a scanning step of scanning the plurality of light beams to be emitted on a common photosensitive body;

a modulating step of pulse-width modulating the plurality of light beams emitted in said emitting step in accordance with respective image data;

a detecting step of detecting a plurality of image pixels which are adjacent to each other in a sub-scanning direction and which are exposed in different main scannings, in accordance with the image data; and

[an exposure intensity] a pulse-width control step of [relatively decreasing an exposure intensity of the light beams for at least one of the plurality of image pixels detected by the detecting step, in response to a detection result of the detecting step] controlling the modulation in said modulating step such that a pulse width for a pixel detected in said detecting step is shorter than a pulse width for a pixel which is not detected in said detecting step.

24. (Amended) An image forming method comprising:

an emitting step of emitting a plurality of light beams;

a scanning step of scanning the plurality of light beams to be emitted on a common photosensitive body;

a modulating step of pulse-width modulating the plurality of light beams emitted in said emitting step in accordance with respective image data;

a detecting step of detecting a plurality of image pixels which are adjacent to each other in a sub-scanning direction and which are exposed in [the] common main scannings, in accordance with the image data; and

[an exposure intensity] a pulse-width control step of [relatively increasing an

exposure intensity of the light beams for at least one of the plurality of image pixels detected by the detecting step, in response to a detection result of the detecting step] controlling the modulation in said modulating step such that a pulse width for a pixel detected by in said detecting step is longer than a pulse width for a pixel which is not detected in said detecting step.

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